High prevalence of bacitracin resistance Among Enterococci Isolated from Humans Stools and Grocery Store Chicken in the United States

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Background: Bacitracin is widely used as a topical or ophthalmic antibiotic ointment for wounds. It is used in some hospitals as the primary antibiotic barrier for patients with severe burns. It is also widely used in the United States to promote the growth of chickens and other livestock. In 1999, the European Union suspended use of bacitracin in livestock for growth promotion because of public health concerns. We wondered if bacitracin-resistant enterococci might be present in chickens and humans in the United States.

Methods: Between July 1998 and June 1999, laboratories in Georgia, Maryland, Minnesota and Oregon used gram-positive selective media (CNA agar) to culture stools from outpatients and chickens purchased from grocery stores. Isolates of enterococci were forwarded to CDC for species identification and antimicrobial susceptibility testing using Sensititre, a semi-automated system. Isolates with bacitracin MIC >4 were considered resistant.

Results: Enterococci were isolated from 237 (74%) of 320 human stools; of the 225 isolates tested, 55 (24%) were *E. faecium*, and 109 (48%) were *E. faecalis*. All human enterococcal isolates were bacitracin resistant (64% had MICs >128). Enterococci were isolated from 351 (86%) of 410 chickens; of the 341 isolates tested, 18 (5%) were *E. faecium*, and 220 (65%) were *E. faecalis*. With the exception of one *E. faecium* isolate, all enterococcal isolates were bacitracin resistant (87% had MICs >128).

Conclusion: Enterococci, including *E. faecium* and *E. faecalis*, were isolated from most human stools and chickens. Almost all isolates were resistant to bacitracin. Because of the limited human use of bacitracin, such resistance may not pose clinical risk, but further studies are necessary to assess whether the human and animal isolates may be related.

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